Claims

What is claimed is:

1. A composition comprising an admixture of a colloidal metal and an immunologically toxic biologically-active factor.

2. The composition of Claim 1, wherein the colloidal metal is selected from the group consisting of colloidal gold and colloidal silver.

3. The composition of Claim 1, wherein the biologically-active factor is selected from the group consisting of cytokines, growth factors, and glycoproteins from infectious organisms.

4. The composition of Claim 1, wherein the immunologically toxic biologically-active factor is selected from the group consisting of Interleukin-2 ("IL-2"), lipid A, phospholipase A2, endotoxins, staphylococcal enterotoxin B, Type I Interferon, Type II Interferon, Tumor Necrosis Factor, IL-1, IL-6, IL-8, IL-4, Transforming Growth Factor-B, Lymphotoxin, IL-5, Migration Inhibition Factor, IL-3, Granulocyte-Macrophage Colony-Stimulating Factor ("CSF"), Monocyte-Macrophage CSF, Granulocyte CSF, IL-7, IL-10, IL-11, IL-12, IL-13, vascular epithelial growth factor ("VEGF"), Angiogenin, transforming growth factor ("TGFα"), heat shock proteins, carbohydrate moieties of blood groups, Rh factors, and fibroblast growth factor.

5. The composition of Claim 1, further comprising a pharmaceutically-acceptable component selected from the group consisting of excipients, buffers, antigen stabilizers, and sterilized carriers.

6. The composition of Claim 1, further comprising a pharmaceutically-acceptable adjuvant.

7. The composition of Claim 6, wherein the adjuvant is selected from the group consisting of Freund's Complete, lipopolysaccharide, monophosphoryl lipid A, muramyl dipeptide, liposomes containing lipid A, alum, muramyl tripeptide-phosphatidyl-ethanoloamine, keyhole limpet hemocyanin, and Freund's Incomplete Adjuvant.

8. A method of administering a toxic biologically-active factor to a human or animal comprising the step of administering to the human or animal, an effective amount of a composition comprising an admixture of a colloidal metal and the toxic biologically-active factor such that the composition elicits an immunological response to the biologically-active factor while reducing toxic side effects resulting from the biologically-active factor.

9. The method of Claim 8, wherein the toxic biologically-active factor is selected from the group consisting of Interleukin-2 ("IL-2"), lipid A, phospholipase A2, endotoxins, staphylococcal enterotoxin B, Type I Interferon, Type II Interferon, tumor necrosis factor, IL-1, IL-6, IL-8, IL-4, Transforming Growth Factor-B, Lymphotoxin, IL-5, Migration Inhibition Factor, IL-3, Granulocyte-Macrophage Colony-Stimulating Factor ("CSF"), Monocyte-Macrophage CSF, Granulocyte CSF, IL-7, IL-10, IL-11, IL-12, IL-13, vascular epithelial growth factor ("VEGF"), Angiogenin, transforming growth factor ("TGFα"), heat shock proteins, carbohydrate moieties of blood groups, Rh factors, and fibroblast growth factor.

10. The method of Claim 8, wherein the composition is administered intravenously.

11. The method of Claim 8, wherein the composition is administered intramuscularly.

12. The method of Claim 8, wherein the composition is administered subcutaneously.

13. The method of Claim 8, wherein the composition is administered in a single dose.

14. The method of Claim 8, wherein the composition is administered in multiple doses.

15. A method of vaccinating a human or animal against disease comprising the step of administering to the human or animal a composition comprising an immunologically effective amount of an admixture of a colloidal metal and a toxic biologically active factor.

16. The method of Claim 15, wherein the toxic biologically-active factor is selected from the group consisting of interleukin-2 ("IL-2"), lipid A, phospholipase A2, endotoxins, staphylococcal enterotoxin B, Type I Interferon, Type II Interferon, tumor necrosis factor, IL-1, IL-6, IL-8, IL-4, Transforming Growth Factor-B, Lymphotoxin, IL-5, Migration Inhibition Factor, IL-3, Granulocyte-Macrophage Colony-Stimulating Factor ("CSF"), Monocyte-Macrophage CSF, Granulocyte CSF, IL-7, IL-10, IL-11, IL-12, IL-13, vascular epithelial growth factor ("VEGF"), Angiogenin, transforming growth factor ("TGFα"), heat shock proteins, carbohydrate moieties of blood groups, Rh factors, and fibroblast growth factor.

17. The method of Claim 15, wherein the composition is administered in a single dose.

18. The method of Claim 15, wherein the composition is administered in multiple doses.

19. A method of treating a human ~~or animal~~ with a cancer or immune disease ~~comprising~~ the step of administering to the human or ~~animal~~ with the cancer or immune disease a therapeutically effective amount of a composition comprising an admixture of a colloidal metal and a toxic biologically-active factor.

20. The method of Claim 19, wherein the toxic biologically-active factor is selected from the group consisting of Interleukin-2 ("IL-2"), lipid A, phospholipase A2, endotoxins, staphylococcal enterotoxin B, Type I Interferon, Type II Interferon, tumor necrosis factor, IL-1, IL-6, IL-8, IL-4, Transforming Growth Factor-B, Lymphotoxin, IL-5, Migration Inhibition Factor, IL-3, Granulocyte-Macrophage Colony-Stimulating Factor ("CSF"), Monocyte-Macrophage CSF, Granulocyte CSF, IL-7, IL-10, IL-11, IL-12, IL-13, vascular epithelial growth factor ("VEGF"), Angiogenin, transforming growth factor ("TGFα"), heat shock proteins, carbohydrate moieties of blood groups, Rh factors, and fibroblast growth factor.

21. The method of Claim 19, wherein the composition is administered in a single dose.

22. The method of Claim 19, wherein the composition is administered in multiple doses.